Second-generation ethanol processing cost prohibitive: study

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Costs for second-generation ethanol processing, which will ease the stress on corn and sugarcane, are unlikely to be competitive until 2020, according to a unique Queen's University study.

"This study really lays out in black and white where we are and where we are going," says Warren Mabee, an assistant professor in the School of Policy Studies and Department of Geography. "It should prompt companies to reassess (their processes going forward)."

The researchers found that building large scale facilities for second-generation ethanol production will be more costly than building plants for first-generation production. One reason is the extra infrastructure necessary for significant and costly pre-treatment of items like wood residue and waste paper. These replacements for corn and sugar cane contain multiple kinds of sugar while corn starch consists of pure glucose.

One solution to the high processing costs is companies responsible for just one part of the process, not building huge plants responsible for the entire process, Dr. Mabee said. This will reduce costs by spreading out the costs between more companies.

"This is a real opportunity to reduce the cost of production," says Jamie Stephen, a Fellow at Queen's University Institute for Energy and Environmental Policy.

Blended with gasoline, ethanol has the potential to reduce dependency on fossil fuels, but utilizing corn and sugarcane to create ethanol is putting stress on these commodities.

The study was recently published in the journal *Biofuels, Bioproducts and Biorefining*.

Provided by Queen's University